Workshop Agile Testing

A Practical Perspective

Erik van Veenendaal
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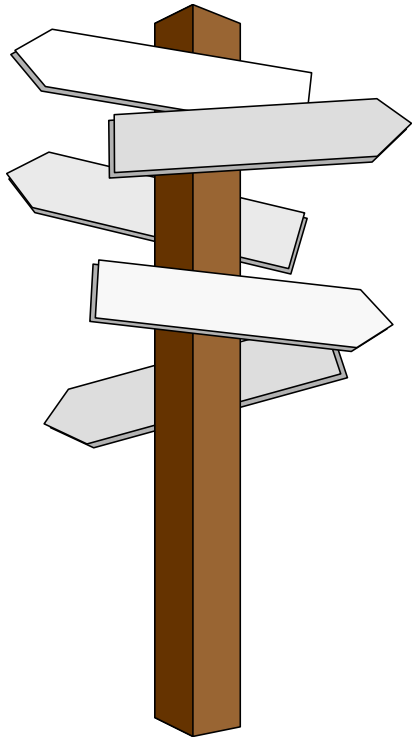
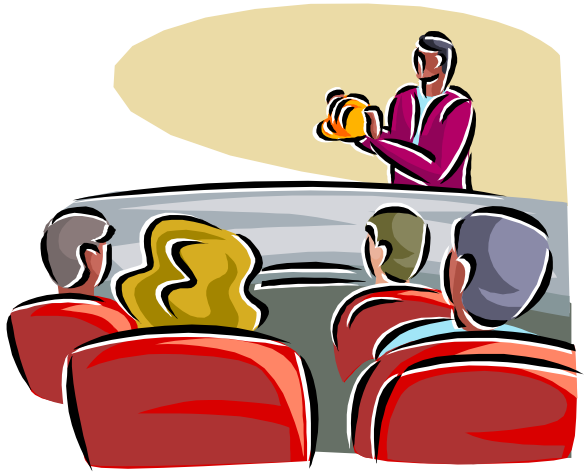
Workshop Agile Testing

- Introduction, ISTQB and CTQB
- What is Agile (Testing)?
- Problems and Challenges
- Agile Testing Practices



Know Your Audience

- Do you know / Have experience with:
  - Agile, SCRUM, ISTQB, TMap
  - Others……?
- What role do you have?
- Any testing experience?
  - How many years?
- In which domain do you work?
- Which lifecycle do you use?



Erik van Veenendaal

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- In testing since 1989 working for many different clients and in many different roles
- Author TMap, ISTQB Foundation, TMMi and many other books and papers
- Former Vice-President International Software Testing Qualifications Board (ISTQB)
- CEO TMMi Foundation
- Regular keynote and tutorial speaker
- Winner Testing Excellence Awards
- Living in Bonaire (Caribbean island)
- Table tennis player and coach

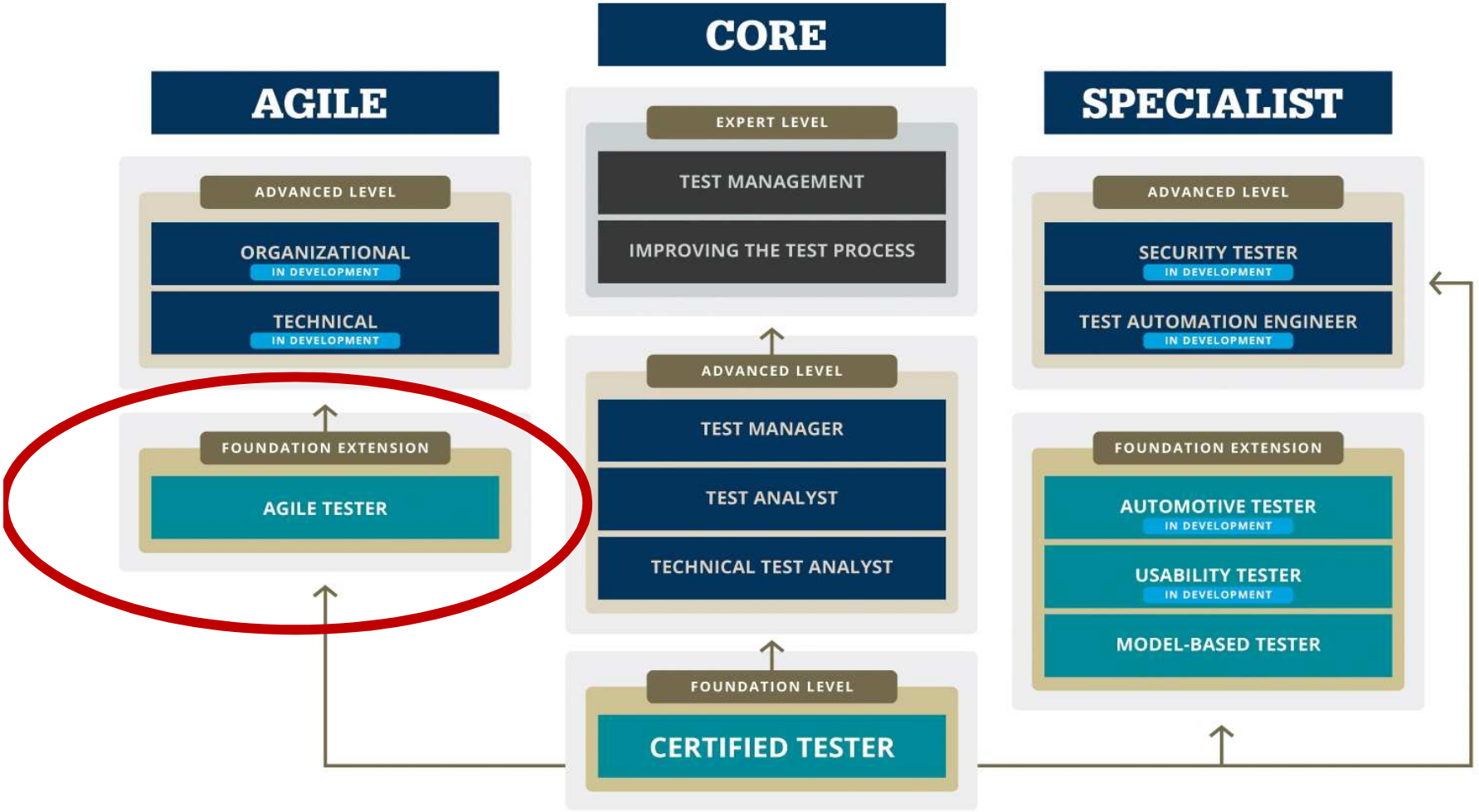
ISTQB Certification

- World's leading organization for certification of professionals in software testing
- Benefits include
  - raising industry standards
  - promoting career development
  - providing competitive edge for employers
- More than 700.000 exams, more than 500.000 certificates
- 3rd largest IT certification scheme
- Foundation, Advanced and Expert certificates

World-wide Coverage

- Countries covered by Member Boards (57 Member Boards covering 81 countries, representing over 90% of the world-wide GDP) and Global Exam Providers

ISTQB Structure and Syllabi



Now also in Curaçao (region)

Curaçao Testing Qualification Board

To contribute to the quality of software products being delivered in Curaçao and its region, through better testing to be enabled by enhancing the knowledge and skills of test professionals and to support the further development of the testing profession.

www.ctqb.org

Agile Manifesto

Whole-Team Approach

Team should include:

- Everyone with the knowledge and skills necessary to ensure project success
- Representatives from the customer and other business stakeholders who determine product features

Benefits include:

- Enhanced communication and collaboration within the team
- Leveraging the various skill sets within the team to the benefit of the project
- Quality is everyone's responsibility

Early and Frequent Feedback

- Avoid requirements misunderstandings
- Clarify customer feature requests, available for customer use early

- Discover, isolate and resolve quality problems early
- Provide information to team regarding productivity and ability to deliver
- Promote consistent project momentum (flow)

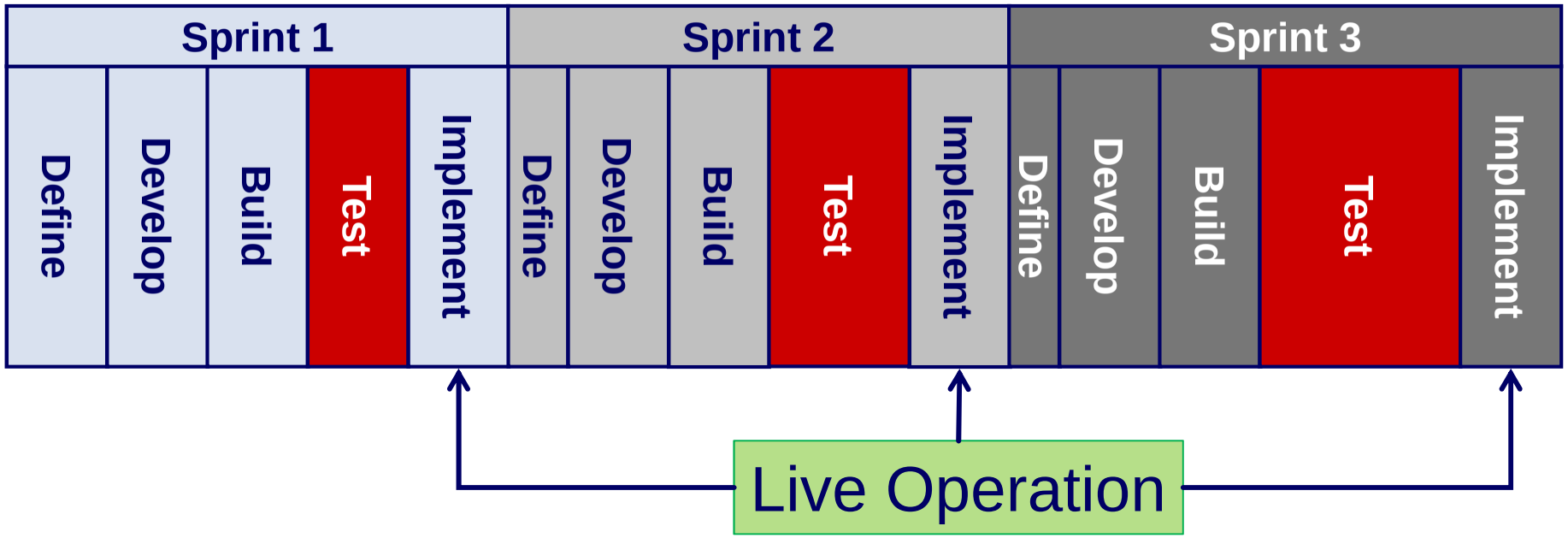
SCRUM

Product Owner
Scrum Master
Scrum Team
Daily Scrum
Shippable Product Increment
Continuous Improvment & Customization
Product Backlog
Sprint Backlog
Sprint
Sprint Review
Sprint Retrospective

Agile Key Characteristics

- Iterative development, “build a little, test a little”
- A tangible product available earlier in the life cycle
- Strong business involvement
- Early validation (and verification)
- Collaborative approach, e.g., during the definition of requirements and test design
- No signed off requirements; based on user needs
- Regression testing increasingly important

and a picture …

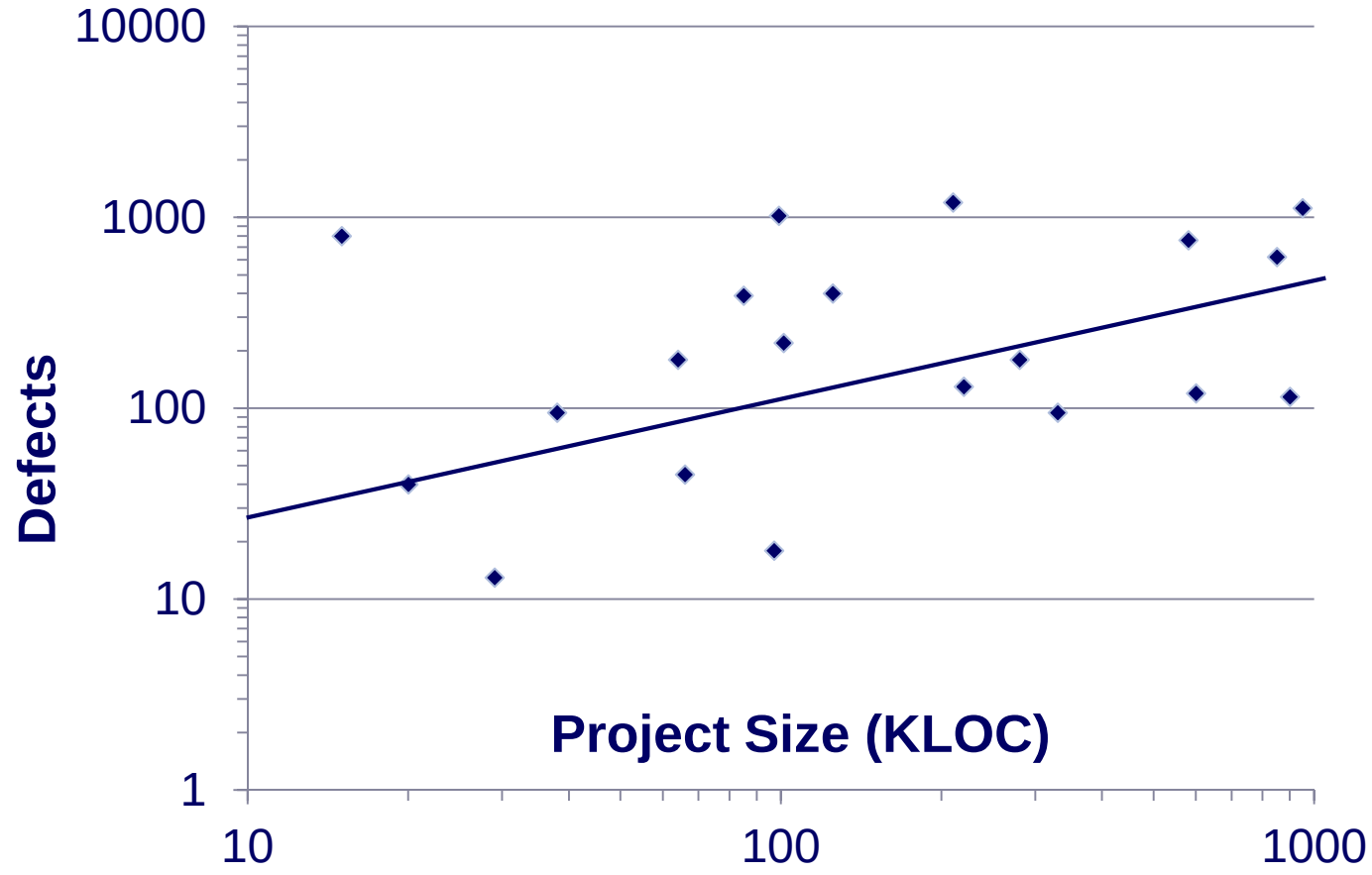


Top 5 Agile Benefits

1. Ability to manage changing priorities
2. Increased team productivity
3. Improved project visibility
4. Increased team motivation
5. Better delivery predictability

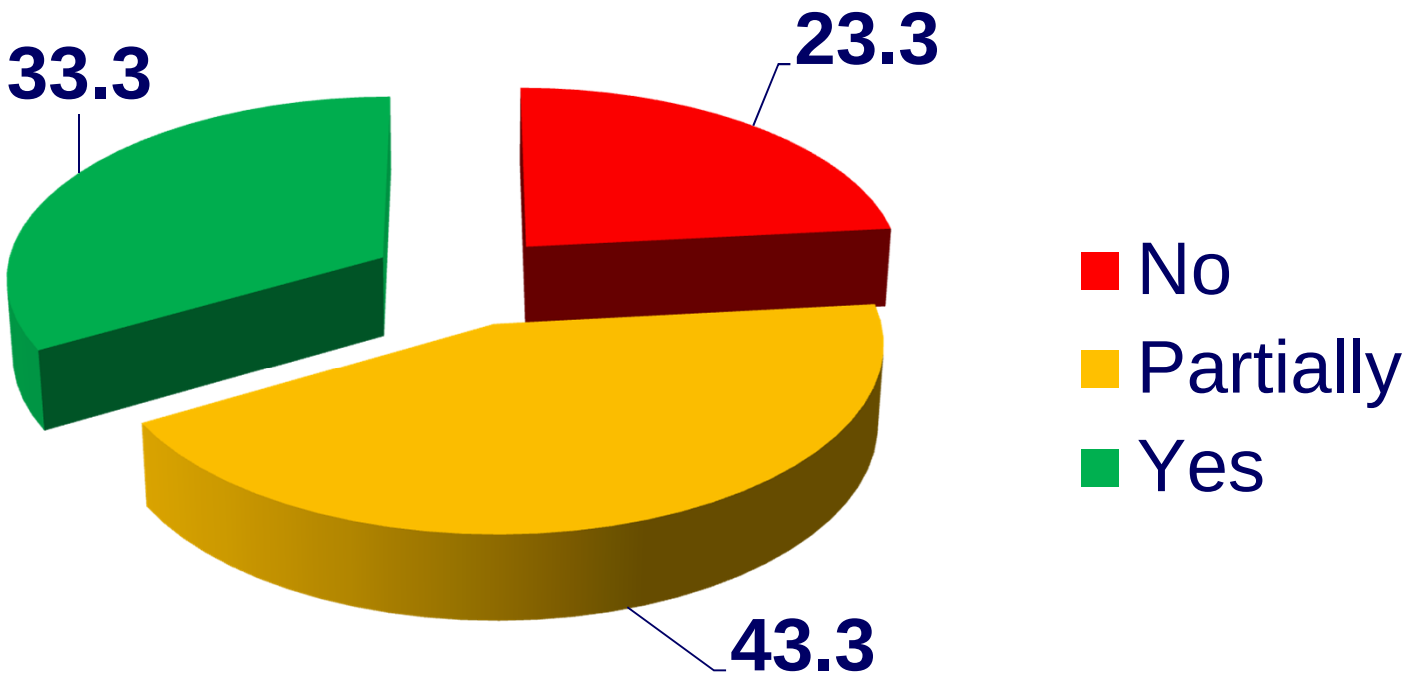
Source*: 10th Annual State of Agile™ Report*

Agile ≠ Silver Bullit



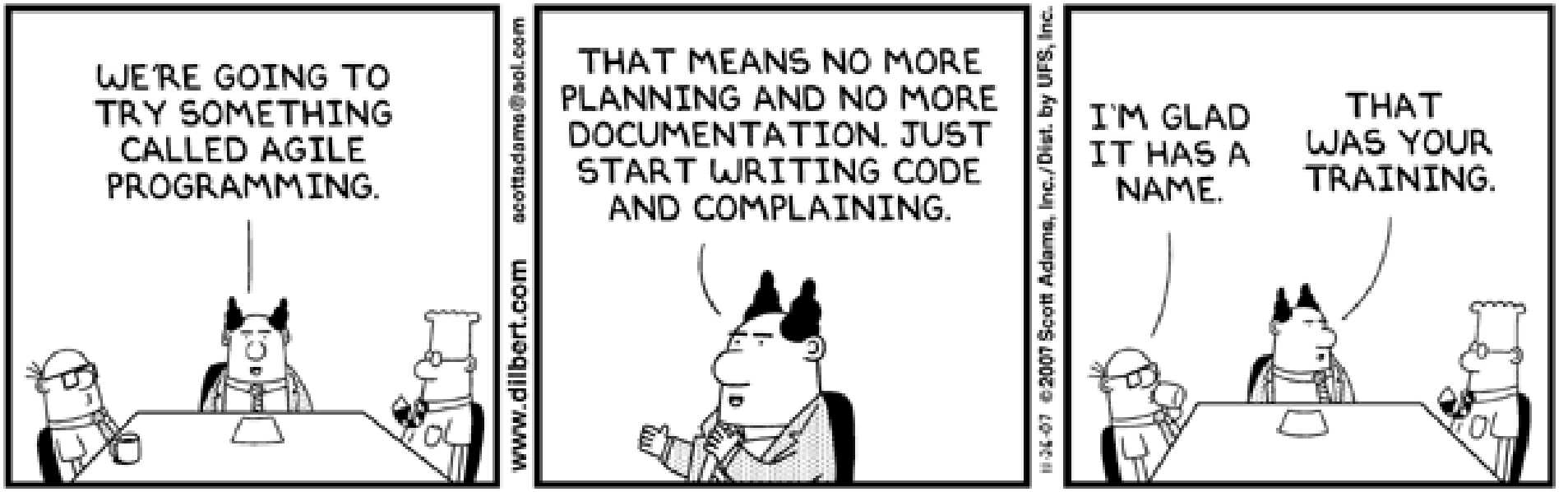
"despite continuous growth in adoption of agile, many organizations are still facing the same challenges as in previous years", World Quality Report

Tester survey, Is Agile working?



Agile-like / Fragile

It's simple, but not easy!!



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Risk Assessment

- Be aware, Be ready
- Risks: Factors that could have negative influence on the Agile testing implementation project
- Based on past experiences
  - Using a checklist
- Likelihood and Impact
- Discuss the risks thoroughly with stakeholders
  - What can be done to mitigate the risks
  - Track actions and assign risk owners!

Exercise – 3/5 minutes only

- In small teams discuss possible risks when implementing Agile testing – make a list!
- Things you could consider …..
  - Organization
  - Processes
  - People
  - Team
  - Methods & Technique
  - Environment
  - Automation & tooling
  - ……

Agile Testing Challenges (1)

“Agile implementation risk list”

- Test automation is not that easy
- Re-usable test scripts for regression testing
- Maintain product overview
- No full requirements specification (scope creep)
- End-to-end testing is done late, if at all
- Communication with users (business language) and developers (technical language)
- Time boxing
- Audit trail from requirements to code / test cases

Agile Testing Challenges (2)

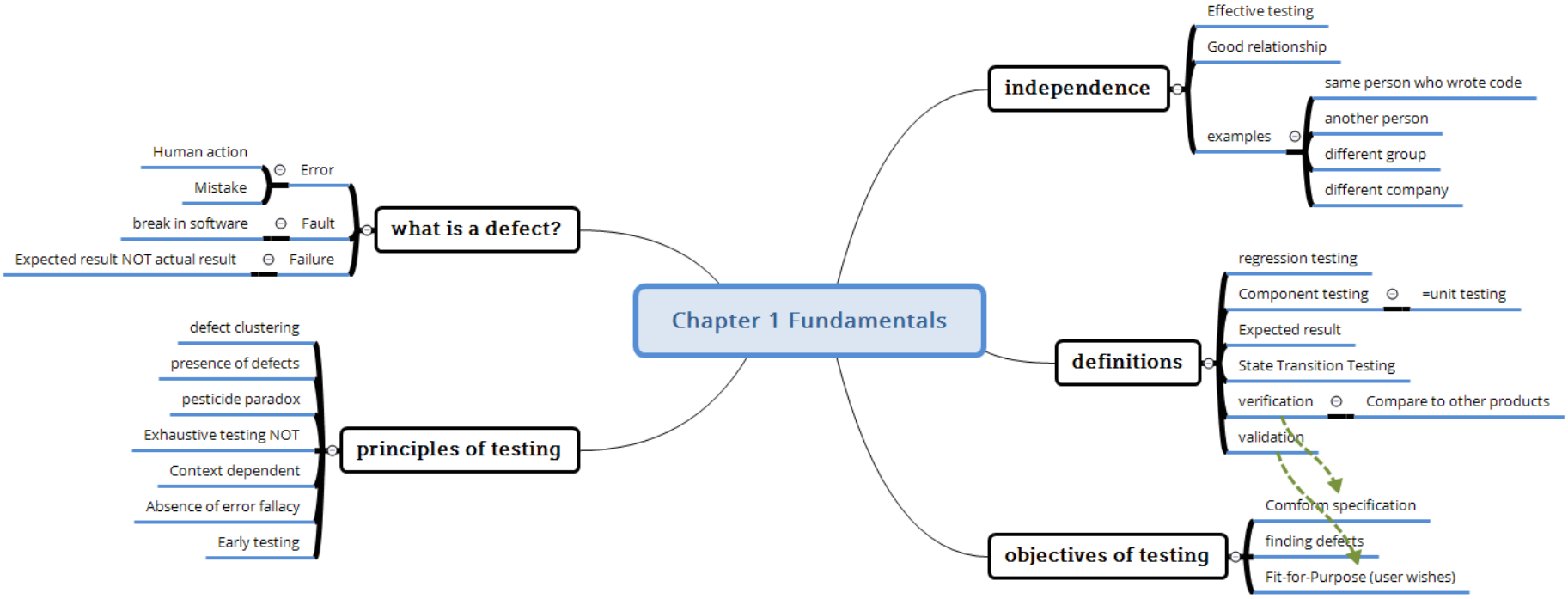
“Agile implementation risk list”

- Involvement of business and real-users
- How to define acceptance criteria
- Maturity level of the organization
- Testing still responsible for quality
- How much documentation is enough
- Understanding of Agile manifesto
- Technical and business knowledge of testers
- Testing knowledge of developers
- Testing non-functional’s within a sprint

Agile Testing Best Practices

Getting the most out of it

- *Learn by doing* (and not just by listening)
- Make *your* mind-map for these best practices!

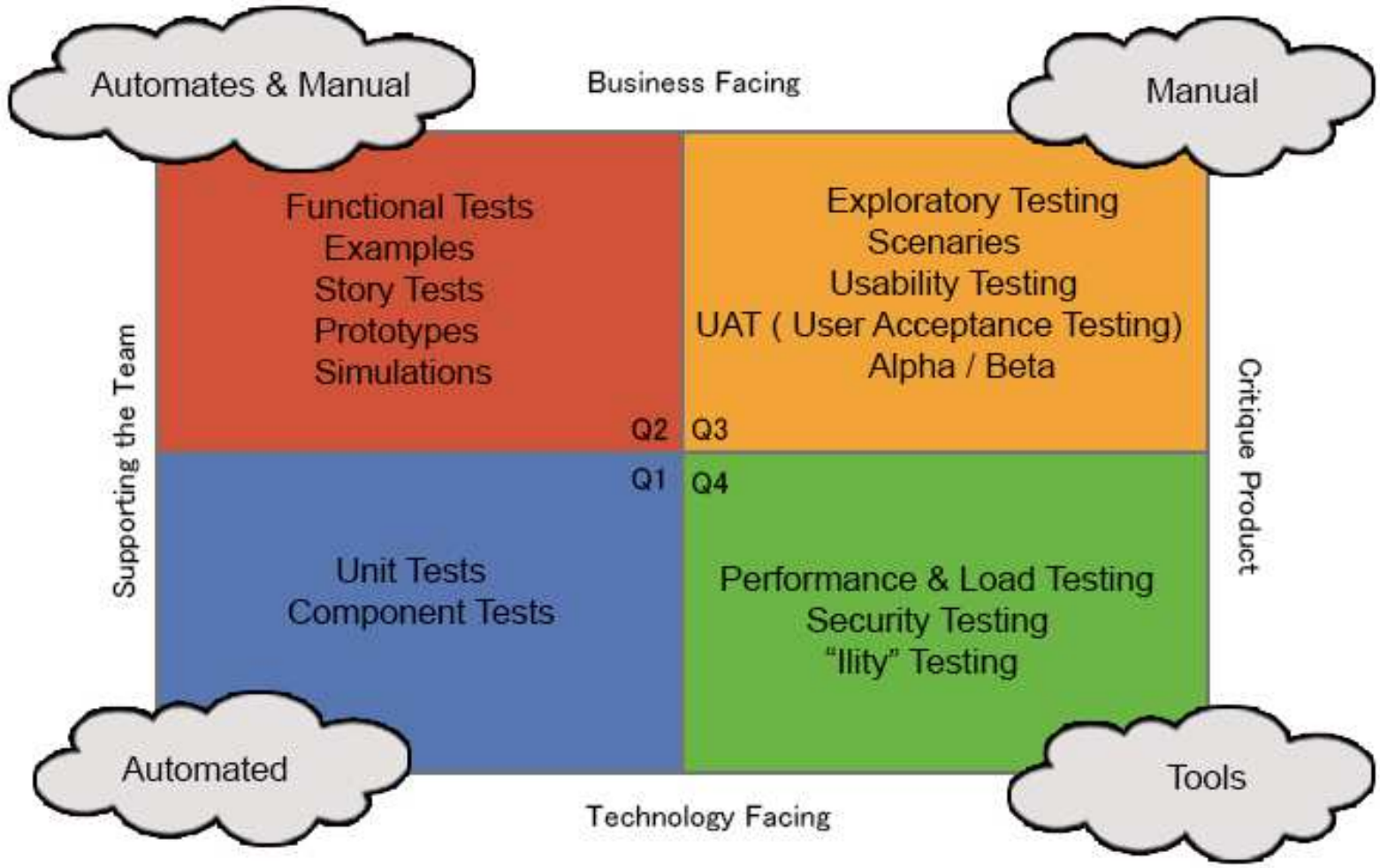


Practice #1: Test Strategy

- High level description of test levels / types for an Agile project, and testing to be performed within each level.
  - What testing is done in iterations, e.g., what is unit testing?
  - Contains description of test levels
  - Addresses the generic product risks
  - Coherent with non-sprint test levels
  - May well take (partly) over from test plan & test process

Objective, Responsibility
Level of independence
Entry and exit criteria
process and deliverables
Test design techniques

Tool: Agile testing Quadrants



Practice # 2: Risk-Based

Testing is risk-based

Define Clear Testing Priorities

Communication, Customer Collaboration
Working software & Responding to change

- Product Risk Session
- Lightweight: Risk Poker
- Risk-Based Test Approach

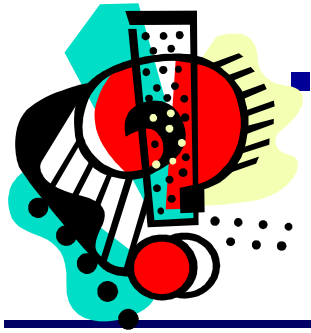
Setting Priorities

➔Product risk identification

- User story based, brainstorming, failure history

➔Product risk analysis

- Risk = impact x likelihood
  - Impact, e.g., safety damage, usage intensity, external visibility, ….
  - Likelihood, e.g., new technology, complexity, interfacing, ….



Product Risk Matrix

Must test

…… Test Approach X…..

Should test

…… Test Approach Y…..

Could Test

…… Test Approach Z…..

Would Test

…… Test Approach A …..

Impact

Practice #3: Acceptance Criteria

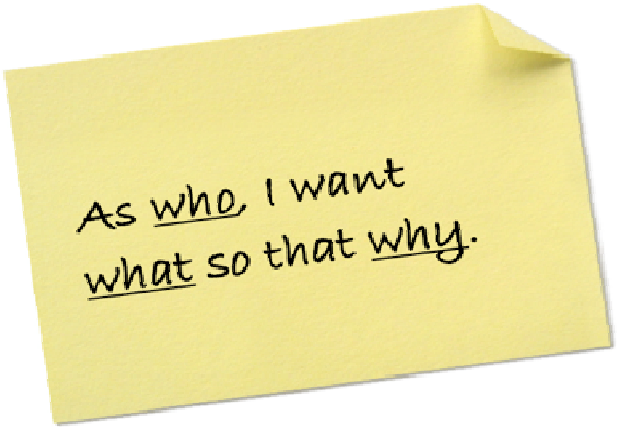
- User Story: what is needed and has to be built (and tested)

As a student

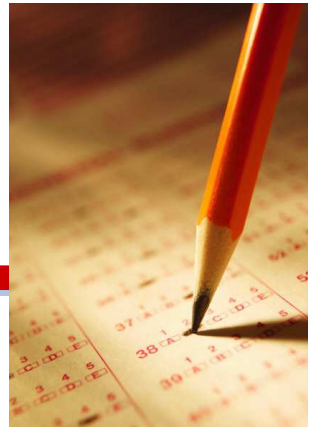
I want to buy a parking pass

So that I can get to school quickly

rationale, to prevent “gold plating”



Acceptance Criteria



involve tester here

- We have to be able to tell whether a solution completely satisfies, or fits, a requirement
- Refinement or grooming sessions
- To make user stories testable
- Also very important for non-functional user stories
- It is usually necessary to discuss acceptance criteria with the stakeholder, e.g.,
  - 90% of the customers must be able to get the correct ticket from the product in no more than 25 seconds

given <context> *when* <the event occurs>
then <expected outcome>

User Story & Acceptance Criteria

As a ISACA conference attendee, I want to be able to register with ISACA Curacao online, so I can register quickly and cut down on paperwork.

Questions by the tester might include

- What information needs to be collected to allow a user to register?
- Where does this information need to be collected/delivered?
- Can the user pay online as part of the registration process?
- Does the user need to be sent an acknowledgment?

Acceptance Criteria

- A user cannot submit a form without completing all the mandatory fields.
- Information from the form is stored in the registrations database.
- Protection against spam is working.
- Payment can be made via credit card.
- An acknowledgment email is sent to the user after submitting the form.

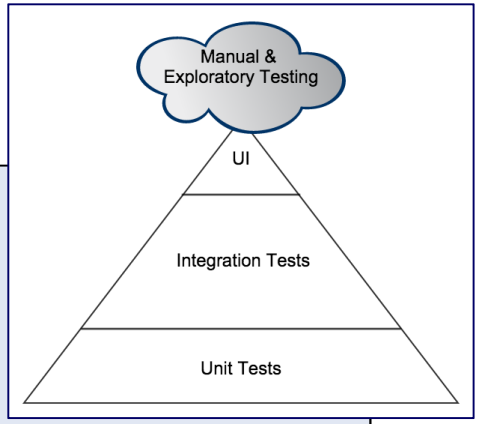
Practice # 4: Unit Testing

Testing requires independence

Get Developers doing Unit Testing

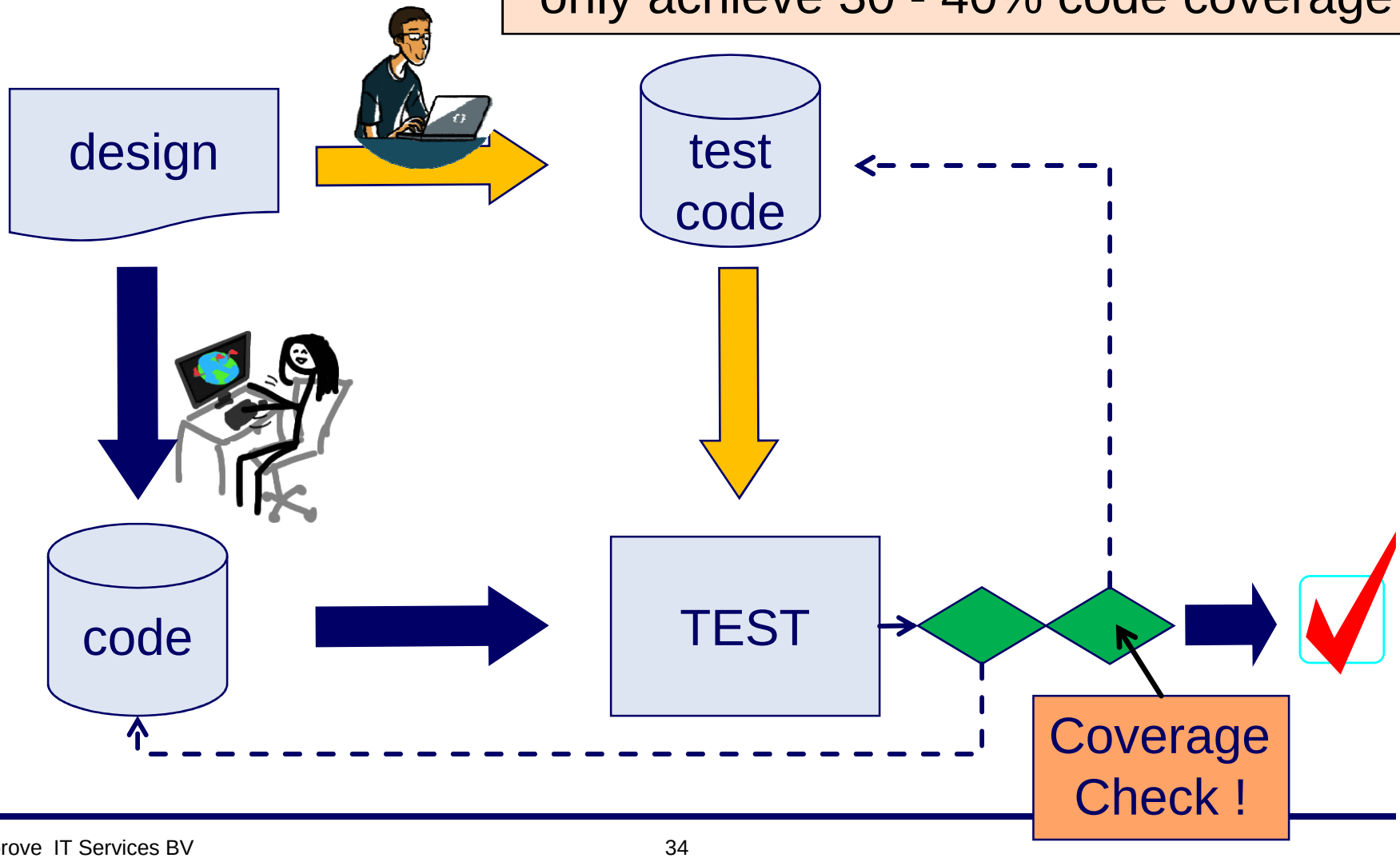
Working software over comprehensive documentation

- Code Coverage
- Buddy Testing (XP)
- Test Driven Development ?



Unit Testing Process

Remember: most high level testing will only achieve 30 - 40% code coverage



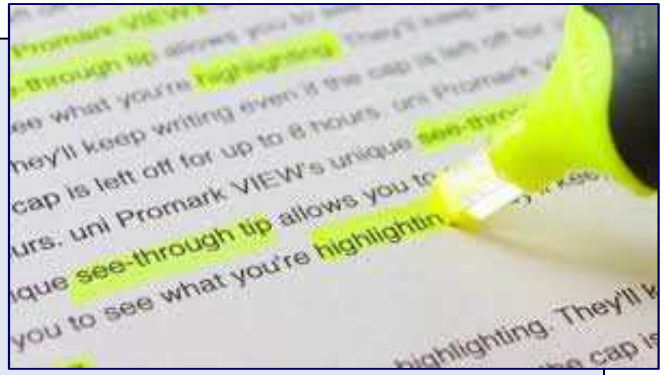
Practice # 5: Exploratory Testing

Testing is finding defects

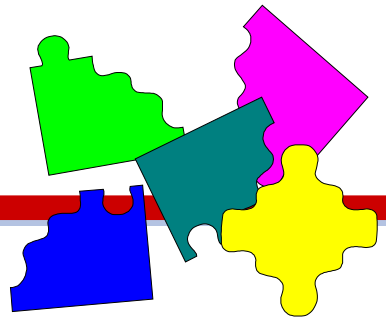
Use Test Techniques as Tools

Responding to change, Customer collaboration and No comphrehensive doc's

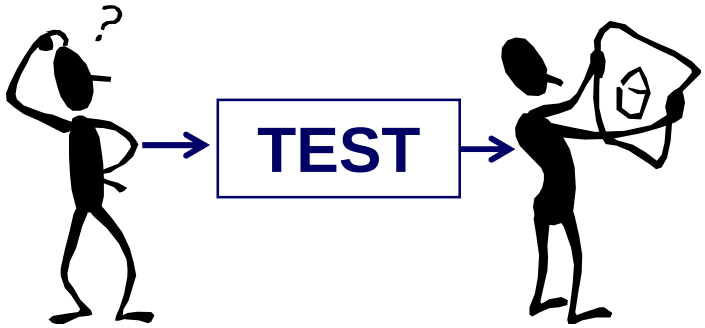
- Apply Test Design
- Use Cases
- Exploratory Testing

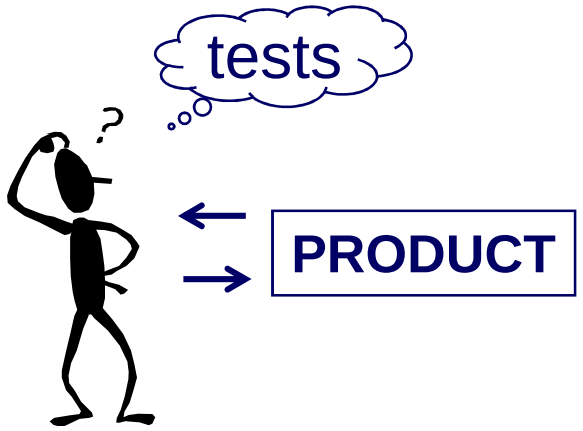


Exploratory Testing



- Very different approach
  - But also a different mindset and objective
- An interactive test process
  - Using the information gained while testing to design new and better tests
- NOT error-guessing as there is a formal process defined !!
  - tasks, objectives and deliverables





Exploratory Testing Process

Session-Based Testing

Keep track of bug vs. fix ratio!

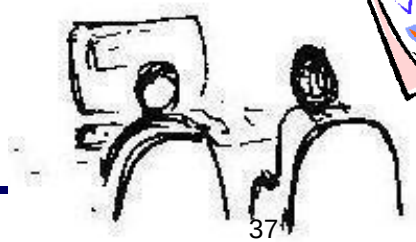
Charter

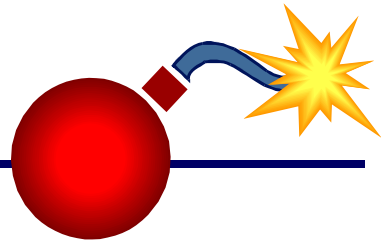
Sessions
- Exploration
- Design
- Execution

Debriefing

Heuristics

- Boundaries
- CRUD
- configurations
- Interruptions
- ....





Practice #6: People

Testing is an extremely complex, intellectually challenging task

Build Experienced & Skilled Testers

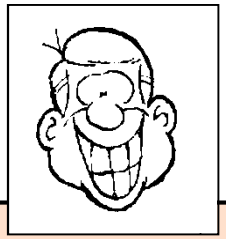
Individuals and interactions
over processes and tools

- Training (on-the-job)
- Team Dynamics
- Not only for Testers!!

People Skills

via (exchanging) Practical Experiences, Coaching and (formal) Training

Best practices and presentations



Test knowledge

- Test principles
- Techniques
- Tools, etc.

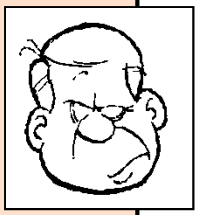
IT knowledge

- Scripting / Automation
- Requirements Eng.
- Configuration mgt.

Domain knowledge

- Business process
- User characteristics

Soft skills



- Communication
- Critical mindset
- Presentation & reporting
- Values

Team Dynamics

Effective teams don't just happen!

- Right experience and skills
- Right attitude & respect
- Common purpose
- Team management
- The right team mixture, e.g., Belbin profiles

Balanced teams are more effective

Nobody is perfect but a team can be ……..

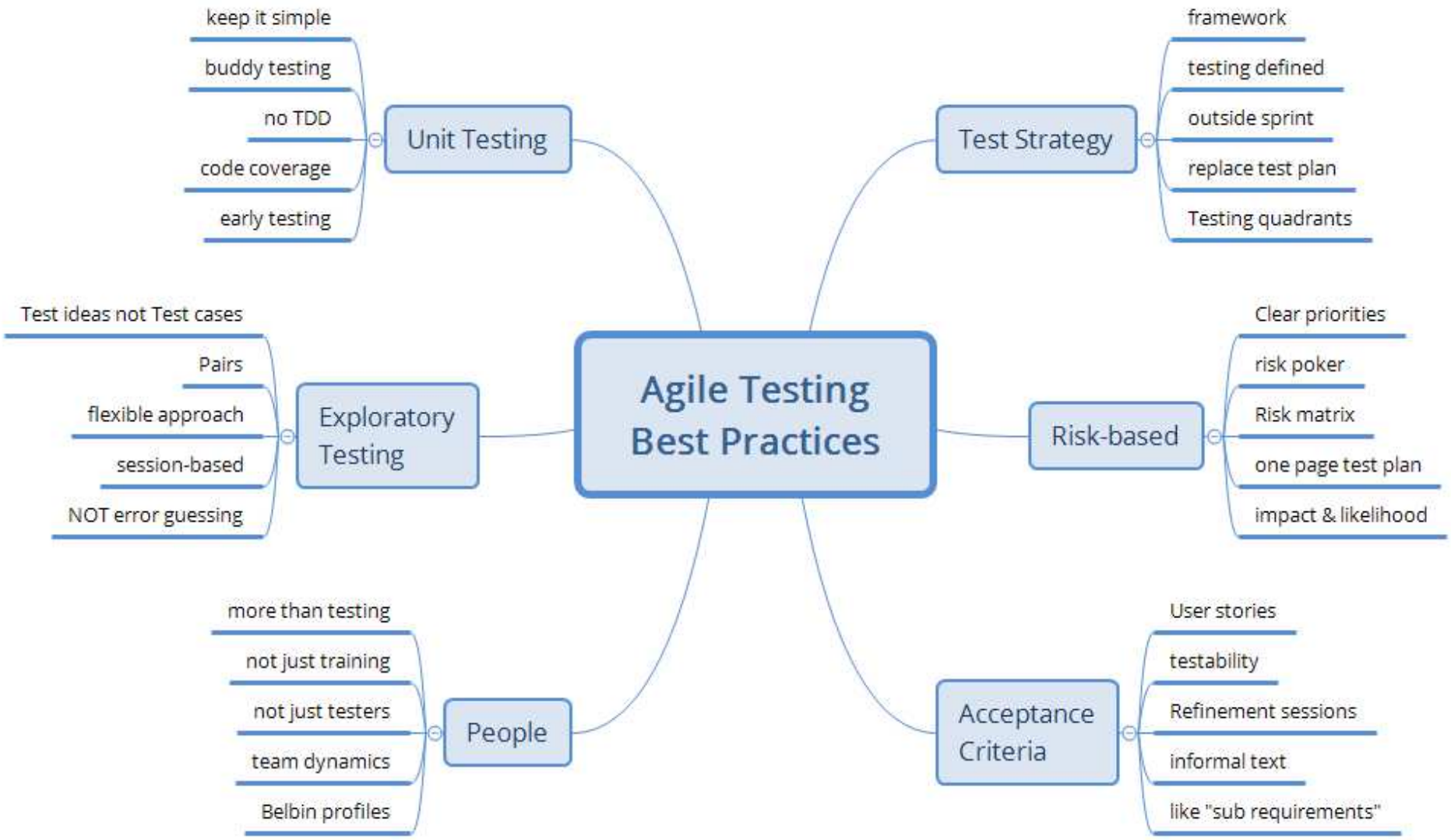
Uhhhhh …. Test Automation

- The objective is to manage the Regression Risk
- Test Automation is NOT an objective

Things to consider

- Costs ….
- Skills ….
- Test Level ….
- Traceability ….
- Defects found ….
- Maturity ….

The Agile Testing Tool Box



But don’t forget …..

It’s simple, but not easy!

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@ErikvVeenendaal

THE END

thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
merci
obrigado
dziękuję
bedankt
go raibh maith agat
kop khun krap
sukriya
terima kasih
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